Sunoco Inc.
100 Green Street
PO Box 426
Marcus Hook PA 19061

July 20, 2012

Division of Air Quality
DEP Southeast Regional Office
2 East Main Street
Norristown, PA 19401-4915

City of Philadelphia
Air Management Services
321 University Avenue, 2nd Floor
Philadelphia, PA 19104

Re: Sunoco Inc. R & M Marcus Hook Refinery
Single Source Determination and Transfer Title V Sources to the Sunoco Philadelphia Refinery

Dear Sirs:

Sunoco Inc. R & M (Sunoco) operates the Marcus Hook Refinery in Delaware County, Marcus Hook, Pennsylvania under Title V Operating Permit (TVOP) No. 23-00001 and the Philadelphia Refinery under TVOP No. V95-038. Consistent with recent discussions with the Pennsylvania Department of Environmental Protection (PADEP) and the City of Philadelphia Air Management System (AMS), the Marcus Hook and Philadelphia refineries meet the applicability test to be regulated as a single source under the Clean Air Act. See Attachment 1 for a Memorandum Regarding Single Source Determination.

Accordingly, Sunoco is submitting this Title V Operating Permit Administrative Amendment application to transfer certain Marcus Hook Refinery TVOP sources to the Sunoco Philadelphia Refinery TVOP to be considered a single source with Sunoco's Philadelphia refinery for the purposes of New Source Review and Prevention of Significant Deterioration regulations and permitting:

1. Source ID: 040 10-4 Feed Heater;
2. Source ID: 045 12-3 Desulf. Heater;
3. Source ID: 060 15-1 Crude Heater;
4. Source ID: 075A 17-2A, Heaters (H01, H02, H03);
5. Source ID: 078 17-2A, H-04 Heater;
6. Source ID: 099 12-3 Crude HTR.H3006;
7. Source ID: 101 PLT. 10-4 FCC Unit;
8. Source ID: 705 12-4, H-01 LSG Heater; and
9. Source ID: 706 12-4, H--02 LSG Stabilizer Heater .

The Title V Operating Permit Administrative Amendment forms for both the Marcus Hook and Philadelphia Refineries are included as Attachments 2 and 3, respectively. Please also find the application fees for the Title V Operating Permit Administrative Amendments in Attachment 4. If you have any questions or comments regarding this letter, please contact me at 610-859-1695.

Sincerely,

Terry A. Soulé

Director, Environmental Services & Policy

\Enclosures

Attachment 1 – Memorandum Regarding Single Source Determination
Attachment 2 – Title V Operating Permit Administrative Amendment Form for the Marcus Hook Refinery
Attachment 3 – Title V Operating Permit Administrative Amendment Form for the Philadelphia Refinery
Attachment 4 – Application Fees

cc: Other CC's

2700-PM-AQ0020 1/2003

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

Request for State Only/Title V Operating Permit Administrative Amendment (in accordance with 25 Pa. Code § 127.450)

1.	**Applicant's Name:** Sunoco Inc. R & M **Facility Name:** Marcus Hook Refinery		**Federal Tax ID:** 23-1743283-12
	Street Address or Route Number of Source: 100 Green Street, Marcus Hook, PA 19061		
	Township/Municipality: Marcus Hook Borough		**County:** Delaware
2.	**Mark appropriate box(es) regarding the basis for this request.**		
	☐ Corrects typographical errors		
	☐ Identifies a change in the name, address or phone number of the Responsible Official identified in the permit or provides a similar change		
	☐ **Requires more frequent monitoring or reporting by the permittee**		
	☒ **Allows for a change in ownership or an operational control of a source in accordance with § 127.450(a)(4)** (***Complete the Change of Ownership Form and a Compliance Review Form***)		
	☐ **Incorporates plan approval requirements into an operating permit in accordance with § 127.450(a)(5)**		
3.	**Operating Permit/Plan Approval No(s):** Title V Permit No: 23-00001		
4.	**Describe in detail the reasons for submission of this request. Attach additional sheet(s) if necessary.** The Sunoco Marcus Hook Refinery sources from Title V Permit No. 23-00001 including Source ID: 040 10-4 Feed Heater, Source ID: 045 12-3 Desulf. Heater, Source ID: 060 15-1 Crude Heater, Source ID: 075A 17-2A, Heaters (H01, H02, H03), Source ID: 078 17-2A, H-04 Heater, Source ID: 099 12-3 Crude HTR,H3006, Source ID: 101 PLT, 10-4 FCC Unit, Source ID: 705 12-4, H-01 LSG Heater, and Source ID: 706 12-4, H--02 LSG Stabilizer Heater at the Marcus Hook refinery are a single source with respect to operations at the Sunoco Philadelphia Refinery and shall be transferred to the Philadelphia permit issued by the City of Philadelphia Department of Public Health Air Management Services, Title V/State Operating Permit No. V95-038. The sources transferred from the Marcus Hook Refinery shall be considered a single source with Sunoco's Philadelphia refinery for the purposes of New Source Review and Prevention of Significant Deterioration regulations and permitting, and future emissions reductions associated with these sources shall be creditable to the Philadelphia refinery.		
5.	**Contact Person Name:** Terry Soulé		**Title:** Director, Environmental Services & Policy
	Mailing Address: PO Box 426 Marcus Hook, PA 19061-0426		**Telephone Number:** 610-859-1695 **Fax Number:** 610-859-3311

Certification by Responsible Official

Subject to the penalties of Title 18 Pa. C.S. Section 4904 and 35 P.S. Section 4009 (b) (2), I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in this form are true, accurate, and complete.

Name: John D. Pickering	**Title:** SVP Manufacturing
Signed: John D. Pickering	**Date:** 7/19/2012

DRAFT
July 6, 2012

Memorandum Regarding Single Source Determination

There is an ample legal and factual basis for the Pennsylvania Department of Environmental Protection ("PADEP") and the City of Philadelphia Air Management System ("AMS") to determine that the Philadelphia and Marcus Hook Refineries meet the applicable test to be regulated as a single source under the Clean Air Act ("CAA"), 42 U.S.C. §§ 7401 et seq., and its state analogues. The scope of what is a "source" under the Clean Air Act, and in particular the adjacency of interlinked but geographically separated operations, is determined on case-by-case, fact specific basis. For the reasons that are more fully set forth below, we submit that PADEP and AMS can determine that the two refineries can be regulated as a single source for New Source Review (NSR) and Title V applicability purposes.

Discussion

The United States Environmental Protection Agency's ("USEPA") Prevention of Significant Deterioration ("PSD") program applies to "major emitting facilities," defined as "stationary sources of air pollutants which emit, or have the potential to emit, one hundred tons per year or more of any air pollutant" from several types of industrial sources, including "petroleum refineries."[1] USEPA regulations define a stationary source as:

> any building, structure, facility, or installation which emits or may emit a regulated NSR pollutant.[2]

In turn, these regulations define a "Building, structure, facility, or installation" as:

> all of the pollutant-emitting activities *which belong to the same industrial grouping*, are located on one or more contiguous or *adjacent properties*, and are under the *control of the same person* (or persons under common control) except the activities of any vessel. Pollutant-emitting activities shall be considered as part of the same industrial grouping if they belong to the same "Major Group" (i.e., which have the same first two digit code) as described in the Standard Industrial Classification Manual, 1972, as amended by the 1977 Supplement . . . .[3]

The PSD requirements promulgated in 40 C.F.R. Part 52 are adopted in their entirety by the PADEP and incorporated by reference under 25 PA. CODE, Chapter 127, Subchapter D.

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[1] 42 U.S.C. § 7479(1).

[2] 40 C.F.R. § 52.21(b)(5).

[3] 40 C.F.R. § 52.21(b)(6) (emphasis added).

Based upon these definitions, both USEPA and PADEP utilize a three-factor test in order to determine if two separate facilities nonetheless constitute a single source for purposes of the PSD program. Specifically, in order to be considered a single source, two facilities must:

> 1. be under the control of the same person or persons under common control;
>
> 2. share the same two-digit Standard Industrial Classification ("SIC") or otherwise evidence a primary facility/support facility relationship; and
>
> 3. be located on one or more contiguous or adjacent properties.[4]

Because the Philadelphia Refinery is currently under the same ownership and has the same SIC as Sunoco's Marcus Hook Refinery,[5] the only factor of concern under the test above is whether the two refineries could be considered "contiguous or adjacent." Because they are just over 17 miles apart, to be considered a single source they must be found to be "adjacent" rather than contiguous.

USEPA makes determinations of adjacency on a case-by-case basis.[6] USEPA's inquiry is not based upon a bright-line test or reference to a specific distance in order to determine whether non-contiguous facilities are "adjacent;" rather, USEPA evaluates only the nature of the relationship between the facilities.[7]

Operationally interdependent facilities that have "a unique or dedicated interdependent relationship with one another"[8] or which are "functionally interrelated"[9] are "adjacent." In past

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[4] *See* Letter from Kathleen Cox, Associate Director, Office of Permits & Air Toxics, U.S. EPA Region III, to Troy D. Breathwaite, Air Permits Manager, Virginia Department of Environmental Quality, Jan. 10, 2012 (setting out these factors); PADEP, Guidance for Performing Single Source Determination for Oil and Gas Industry 4, Oct. 12, 2011 (hereinafter "PADEP Guidance") (same), *available at* http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-85786/270-0810-006.pdf.

[5] Both the Philadelphia and Marcus Hook Refineries are classified under SIC code 2911 – Petroleum Refining.

[6] Letter from Richard R. Long, Director, Air Program, U.S. EPA Region III, to Lynn Menlove, Manager, New Source Review Section, Utah Division of Air Quality, May 21, 1998.

[7] Cox, *supra* note 4.

[8] Enclosure—Response to Comments on the Florida River Compression Facility's March 28, 2008 Draft Title V Permit to Operate, Letter from Callie A. Videtich, Director, U.S. EPA Air Program, to John D. Lowe, Deputy Florida Operations Manager, BP America Production Company, Oct. 1, 2010.

[9] Long, *supra* note 7.

single source determinations, USEPA has looked to, among others,[10] the following factors relevant to the interrelated relationship that characterizes adjacency:

1. Whether materials are routinely transferred between facilities.[11]

In past USEPA determinations, the transport of materials between two facilities has supported a single source determination. Typically, materials have transferred via pipeline[12] or some other "dedicated channel."[13] A broad set of materials can be transferred between facilities in order to support adjacency; even a disposal pipeline connecting facilities has been found to support a single source determination.[14]

Materials were routinely transferred between the Marcus Hook and Philadelphia Refineries. Indeed, the facilities are connected via Intra-refinery Pipeline, three proprietary pipelines built and used solely to connect the Philadelphia and Marcus Hook Refinery pipelines and transfer feedstocks, products, and intermediates. The Intra-refinery Pipeline facilitated the transfer of several specific materials:

- Naphtha from the Marcus Hook Refinery crude unit was sent to the Philadelphia Refinery as reformer unit feedstock. On average, 13,000 bbls/day were transferred to the Philadelphia Refinery in 2010 and 2011.

- BTX reformate from the Philadelphia Refinery Reformer unit was sent to the Marcus Hook Refinery UDEX unit to allow the Philadelphia Refinery to meet its benzene

[10] This memorandum does not consider whether the location of the newer facility was chosen primarily because of its proximity to the existing facility, an additional factor identified by USEPA as relevant to adjacency. *See id.* Because the Marcus Hook and Philadelphia Refineries were constructed by different entities at different periods of time, this factor did not drive the decision-making process. However, we understand that Sunoco acquired the Philadelphia Refinery in 1988 with the intent of operating the facility in concert with its operations at Marcus Hook. The functional interrelatedness of the Marcus Hook and Philadelphia Refineries as they exist today, as described in more detail with regard to the various factors set forth below, are indicative of such an intention. We further note that USEPA has acknowledged that not all factors considered in evaluating adjacency need be satisfied in order to make a single source determination. *See id.*

[11] *Id.*

[12] *See* Cox, *supra* note 4 (finding that facilities linked by a 2.3 mile pipeline through which treated landfill gas was routinely sent in order to support the main combustion operation at one of the facilities were a single source).

[13] *See* Long, *supra* note 7 (explaining that EPA previously recommended Great Salt Lake Minerals facilities, 21.5 miles apart, be treated as a single source based on their functional inter-relationship, evidenced in part by a dedicated channel between them).

[14] *See id.* (pointing to Anheuser-Busch in Fort Collins, Colorado where a brewery and landfarm six miles apart were considered to be functionally interrelated because the landfarm was an integral part of the brewery operations as evidenced in part by a disposal pipeline between the two).

gasoline requirements. On average, approximately 3,000 bbls/day were sent to the Marcus Hook Refinery.

- Heavy reformate from Marcus Hook Refinery reformer was sent to the Philadelphia Refinery to be blended to create higher octane RBOB. On average, approximately 3,500 bbls/day were sent to the Philadelphia Refinery.

- Benzene was sent from the Marcus Hook Refinery UDEX unit for use as feedstock for the Philadelphia Refinery 1733 Cumene unit. On average, approximately 2,500 bbls/day were sent to the Philadelphia Refinery.

Additionally, in the future, gasoline and diesel production at the Philadelphia Refinery will be moved via the Intra-refinery Pipeline to Marcus Hook for storage and distribution into the retail network.

Moreover, feedstocks were transferred between the Marcus Hook and Philadelphia Refineries via public rail and leased barges. For instance, gas oil from the Marcus Hook Refinery crude unit was barged to the Philadelphia Refinery as feedstock for the FCCUs. On average, approximately 7,500 bbls/day of gas oil were sent to the Philadelphia Refinery.

Other materials transferred between the Marcus Hook and Philadelphia Refineries included:

- Non-desulfurized light cycle oil from the Marcus Hook Refinery FCCU to the Philadelphia Refinery hydrotreater feedstock to produce diesel. On average, approximately 15,000 bbls/day were sent to the Philadelphia Refinery.

- RGP was sent from the Philadelphia Refinery to the Marcus Hook Refinery as feedstock for the PP splitter to produce polymer grade propylene. On average, approximately 1,600 bbls/day were transferred to the Marcus Hook Refinery.

- Butane and isobutane were moved between the two facilities throughout the year. Butane is sent from the Philadelphia Refinery to Marcus Hook to be stored in the underground caverns during summer months when low-RVP requirements are in effect. During the summer season, more than a million bbls were typically sent for storage. These volumes are moved back to the Philadelphia Refinery during high-RVP season for gasoline blending. Isobutane (on average, 2,000 bbls/day) is moved from the Marcus Hook Refinery to the Philadelphia Refinery as feedstock for the alkylation units.

Thus, the manner in which Sunoco routinely transferred materials between the Philadelphia and Marcus Hook Refineries is consistent with previous USEPA single source determinations and supports a finding that the facilities are adjacent.

2. Whether the production process is split in any way between facilities.[15]

Adjacency is also supported when production processes are split between two facilities. For instance, previous USEPA determinations have found facilities to be adjacent when products were transported from one facility to the other for further processing.[16]

As set forth above, several feedstocks and intermediates were routinely transferred between the facilities for use at various points in the production processes at both the Marcus Hook and Philadelphia Refineries. Thus, feedstocks that originate at one facility were oftentimes processed at the other. Similarly, depending on the final product to be produced, intermediates in the petroleum refining process at one facility were transferred to the other to complete the production process. Thus, the petroleum refining processes in place at the Philadelphia and Marcus Hook Refineries are split in a manner that supports a finding that the facilities are adjacent.

3. Whether managers or other workers frequently shuttle back and forth to be actively involved in both facilities.[17]

Sunoco has consistently managed its operations at the Philadelphia and Marcus Hook Refineries in conjunction with one another. Indeed, the coordinated management of the Philadelphia and Marcus Hook Refineries is perhaps best exemplified in the Second Amendment to the 2005 Consent Decree. That amendment extended the deadline for installing a wet gas scrubber at the Marcus Hook Refinery in exchange for various emissions reductions at the Philadelphia Refinery and Sunoco's Frankford facility. The Marcus Hook and Philadelphia Refineries also share a relationship with respect to Title II compliance. Production volumes were pooled at the facilities in order to meet the sulfur, VOC, and benzene specifications in gasoline. Additionally, production volumes were pooled to calculate the renewable volume obligation for RFS-2 program compliance.

Moreover, Sunoco spends a significant amount of time on logistical and other operational coordination between the facilities. For instance, a commercial supply team of 66 individuals is shared by both facilities, coordinating operations relating to optimization, marine, compliance, trading, supply chain, scheduling, and renewables. Similarly, manufacturing management is shared by both facilities including HES, laboratories, technology, capital projects, and turnaround management operations. The Marcus Hook and Philadelphia refineries also shared a mobile maintenance work force in which maintenance personnel were deployed to either facility as needed. Finally, corporate support, including legal, IT, HR and procurement services, was

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[15] *Id.*

[16] *See id.* (citing the Acme Steel Company operations in Chicago where hot metal produces at a blast furnace is transported via commercial rail to the BOF shop 3.7 miles away for further processing into steel).

[17] *Id.*

shared by both facilities. Thus, the management of the Philadelphia and Marcus Hook Refineries lends further support to the conclusion that the facilities are adjacent under a single source analysis.

4. Whether operations at one facility support or are essential to operations at the other facility.[18]

As described above, the Philadelphia and Marcus Hook Refineries have substantial interconnections between them, production is often split between them, and management of the facilities is coordinated. These individual factors give rise to a larger special relationship between the facilities. For instance, the transfer of feedstocks and intermediates that characterizes the physical connection between the Marcus Hook and Philadelphia Refineries is an exclusive relationship; the Philadelphia Refinery does not have the physical infrastructure in place to accommodate this type of transfer with other refineries, nor does it otherwise share the same types of materials with other refineries. Indeed, since crude oil refining operations at Marcus Hook have ceased, the Philadelphia has had to alter its sourcing of many feedstocks and intermediates, often at a substantial cost. For example:

- The Philadelphia Refinery must now purchase naphtha. Replacing the 13,000 bbls/day previously transferred to the Philadelphia Refinery from the Marcus Hook Refinery carries an average annual replacement cost of approximately $6.5MM per year.

- The Philadelphia Refinery UDEX unit must now operate at a higher capacity to accommodate more raffinate processing and remove benzene from the gasoline pool at Philadelphia.

- The Philadelphia Refinery must now purchase alkalyte as needed to produce sufficient volumes of high octane gasoline.

These circumstances evidence the importance of the Marcus Hook Refinery to the Philadelphia Refinery's operations, lending additional support to a finding that the facilities are adjacent.

Importantly, application of these and other factors to determine adjacency do not result in bright-line distance limitation beyond which non-contiguous facilities cannot be considered adjacent. Indeed, in the case of Great Salt Lake Minerals, the company's production operations and a pump station were found to be a single source even though the pump station was located 21.5 miles away.[19] As this and other previous determinations exemplify, "EPA has never established a specific distance between pollutant emitting activities for determining whether two non-contiguous facilities are adjacent, but EPA has historically interpreted the term to include

[18] *Id.*

[19] *Id.*

concepts other than the physical distance between two facilities."[20] Thus, though the Philadelphia and Marcus Hook Refineries are just over 17 miles apart, in light of the factors discussed above, they are still "adjacent" and therefore constitute a single source for NSR and Title V applicability determinations.

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[20] Letter from Ceryl L. Norton, Director, Air and Radiation Division, U.S. EPA, to Scott Huber, Summit Petroleum Corp, Oct. 18, 2010 (determining that 100 sour gas production wells connected with a gas sweetening plant through a collection system were a single source, despite ranging from 500 ft to over 8 miles away from the plant).